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WHAT FARMERS ARE DOING.

When we consider the immense quantities of fertilizers purchased every year by the farmers, and the little benefit they derive from their use, the question arises, are they unsuited to the demands of the soil, or of the crop, or of both, for upon this answer hang the dollars of their users.

In the first place, then, let us see what a reasonably fertile soil contains of nitrogen, phosphoric acid and of potash. A soil that will grow 30 bushels of corn must have, of

Nitrogen, 45 pounds.
Potash, 45 pounds.
Phosphoric acid, 14.1 pounds.

Now let us see what are the constituents of a ton of fertilizer. Taking the *Harvest Queen*, a very popular one in some sections, we find it guaranteed to contain per ton,

Nitrogen, 30 pounds.
Potash, 30 pounds.
Phosphoric acid, 220 pounds.

But phosphoric acid is derived from bones, marls, natural guano, South Carolina and Florida rocks, apatite of Canada, and the basic slag of the Bessemer furnaces, and is worth 6 cents per pound.

Now we see that on the basis of crop needs we only want 14.2 pounds of phosphoric acid to 45 pounds each of potash and nitrogen, so that we are really paying for 206 pounds of food stuff that we do not want, and are out \$12.36 for a manure sufficient to raise 440 bushels of corn in every ton we buy. Now Mr. Whitcher, director of the New Hampshire Experiment Station has demonstrated by experiment, beyond successful cavil, that the potash there should be three times as much as the phosphoric acid, or to be a little more concise 2.3 times as much. Even in South Carolina the phosphoric acid stands as 13 pounds to 10 pounds in a ton of grain. If we suppose the manure of our cattle, horses, sheep, and hogs to be a "complete manure" we shall find that their potash is about twice or thrice times as much as their phosphoric acid, and we presume few farmers will be found to dispute the wisdom of their combination. In all these the nitrogen is about equal in quantity to the potash in that of cattle and horses; is one-fourth more in that of sheep, and is one-third less in the case of hogs. Now to get this 20 pounds of fertilizer, we should have to handle 2,000 pounds of cattle manure, of which no less than 1,560 pounds would be water. To get the 280 pounds of fertilizing matter in the *Harvest Queen*, we should pay freight on,

pay for the handling and hauling of 1,720 pounds of stuff we had no use for. Let us look a little more closely at this cost.

30 lbs. Ammonia at 15 cts.....	\$ 4 50
30 lbs. Potash at 5 cts.....	1 50
220 lbs. Phosphoric Acid at 6 cts..	13 20
Total,	\$ 19 20
Mixing and bagging.....	\$ 3 00
Absolute cost	\$ 22 20

Harvest Queen sells at.....\$ 23 00

But if we only paid for 30 pounds of Phosphoric acid, which would be far too much, then the account would stand:

Ammonia.....	\$ 4 50
Potash.....	1 50
Phosphoric Acid.....	1 80
Total,	\$ 7 80

Now the chemist of the Massachusetts Experiment Station values the fertilizing ingredients in a ton of "corn kernels," nitrogen, potash, phosphoric acid and all others at only \$6.37. (A ton of corn kernels is nearly 36 bushels shelled corn.) With these facts before us there is no escaping the irresistible conclusion that the farmers are paying for what they do not want. The Experiment Stations of the country are aiding the deceit by not publishing the pounds of fertilizing ingredients in a bushel or a ton of corn.

Is it any wonder then that farmers are growing poorer, or that their lands are not improving? Prof. Wagner, the highest authority on the use of "Commercial Manures" is outspoken in his condemnation of this "excessive phosphoric acid manuring." He says, not only is it "an extravagance but in many cases an injury to the crop." It causes the plant exposed to its "influence to die too soon."

A reformer is evidently needed in our fertilizing methods; one who will arrange their composition according to actual demands, not theoretical views.

Next issue we propose, with the editor's approval, to have something more of interest to say to the farmers about phosphoric manuring. S. E.

NORTH CAROLINA NOTES.

The many quotations which X. brings out upon the corn question, none of them answer my question, How does corn get nitrogen from the air? simply because no one has ever proved, with any scientific exactness, that corn, or any other plant, gets nitrogen from the air direct. The only trouble with X. and his authorities is that they ignore the fact that during the hot season there is a constant nitrification, that is, formation

of nitrates, in all cultivated soils. That this nitrification is due to micro-organisms in the soil, and that in soils abounding in decomposed organic matter, these micro-organisms are more abundant than in a soil lacking humus. And just to the extent a soil lacks humus, it will be found to lack nitrogen, and any farmer knows that a black soil, full of humus, will give a bigger crop of corn than one of a thin, sandy character without the vegetable matter.

Nitrates are the most readily available form in which plants get nitrogen, and they, too, are the hardest to keep in the soil because of their leaching rapidly away. The corn plant, in a favorable soil, with its wide spreading roots, gets the nitrates rapidly and uses all it can get, but if there is not a sufficient supply within reach of its roots, it simply does not get them, and the result is apparent in the crop. There is no need of mystification about the matter. There is not the slightest evidence, that I have ever seen, that the corn plant gets any nitrogen but what its roots absorb from the soil-water.

Put a plant in a soil destitute of nitrogen and completely sterilized from micro-organisms, and you may put its foliage in an atmosphere saturated with ammonia and not produce any effect upon the growth of the plant. I do not mean from all this that it is necessary to purchase nitrogen and apply it to the soil. Such a course will give more rapid results, but if the course of culture on a farm includes the growth of leguminous plants, which are particularly favorable to nitrification, and their growth is promoted by liberal applications of phosphates and potash, there will very shortly be no need for purchased nitrogen. X. can see very well that the black swamp lands of Wicomico grow more corn without help than the thin, sandy uplands there will with all the phosphates and potash he may choose to apply. The air over the upland is just as rich as that over the lowlands, and yet a few years of buried crops of corn, peas and clover will bring that sandy upland into a condition for producing the maximum crops of corn, and yet the air does not contain a particle more of nitrogen than it did before. It is about time the "free-nitrogen-of-the-air" fad was dropped—so far as assimilation is concerned.

Crimson clover gets another good lift from Mr. Brown. I notice in another journal that our friend, Mr. Henry Stewart, tells me that I am altogether mistaken about the color of the bloom of this clover; I called

it blood-red, but Mr. Stewart, who says he has seen a few volunteer plants, says the true color is flesh color. It was, doubtless, very thoughtless for this plant not to consult Mr. Stewart to find out its true color before covering our fields with blood-red blooms, for though there are numerous pale pink blooms scattered over a field, ninety-nine out of every hundred of the flower-heads are blood-red, as every one knows who has grown it.

A correspondent wants me to tell your readers about Teosinte (*Reane luxurians*). I would like to do so if I could, but I make it a rule not to write about anything I know nothing about. I have never grown Teosinte and cannot form any real opinion except from what I have seen on other people's land. My impression is that no one can afford to grow Teosinte, or Pearl Millet, or any crop of this character, unless he has a soil of great natural fertility that can stand the drain these things make upon it. On an ordinary soil stand by cow-peas and crimson clover. Mr. Henry Stewart will doubtless tell you all about Teosinte.

W. F. MASSEY.

Raleigh, N. C.

THE POTATO CROP AROUND NORFOLK.

Thinking that the readers of THE AMERICAN FARMER would be somewhat interested in knowing something about our potato crop, just now being dug, I drop you a few lines in regard to the same. The pushing truckers on the Western Branch are in the midst of their potato harvest, as that section of our trucking field is a few days earlier than we are over on this side. The yield is not as good as last year and the "stand" is not as uniform, owing to the long and heavy rains at planting time.

We aim to plant our potatoes in February, if possible, and to begin digging early in June. February of this year, as well as a portion of March, was too wet to allow of successful planting. However the area in potatoes was large and, had the stand been good and the season otherwise favorable, we should have had the largest crop known. Last year we had 500,000 barrels which sold at an average price of \$3 per barrel.

This year we shall fall short in the yield but the present prospects indicate an increased price. Potatoes yesterday sold in New York and Philadelphia at \$6 to \$6.50 per barrel with prices tending upward. The weather for the maturing crop is

now fine, as we have had several rains lately (a good one last night) that is sending them along rapidly. Our heavy shipments will begin next week, the 15th inst., and will continue until 10th to 15th of July.

The potato crop is one of our most important crops. In fact it may be said to be our *most important crop*. It brings more money into this section than any other single crop. The best thing about it is this. Our very large crop comes on to the market just about the time the old has been exhausted. If it came one month earlier it would glut every northern market, because it would come not only in competition with the new southern crop, but would also come in competition with the last of the old crop at the north. If it came a month later it would clash with the new crop of Long Island, Jersey and Delaware. As it is, it comes just in the time of largest demand and we are able to dispose of it to good advantage and for good prices.

It is this fact that encourages the planting of a potato crop each year a little larger than the preceeding one. If it had not been that the season for 1891 has been what we might call a poor one we fear that our immense crop would have glutted the northern markets.

The berry crop and the potato crop are destined for years to be our most important crops. The facilities our potato growers enjoy for getting them to market are the best in the world. The crop is a heavy one to handle. If it had to be hauled by team to market it would be a large item of expense. As it is, our large crop is grown close to the city, or close to navigable water, or railroad depot. The section around Norfolk is so cut up with arms of the sea (navigable for small vessels) and has so many railroads running through it that every one of our large potato growers has a chance to send his heavy crops north by water or rail, or both, with a very short haul from farm to said depots or wharves.

There are very few farms in the trucking belt around Norfolk that are more than two miles from navigable water or railroad station. An average yield of potatoes is 25 to 30 bbls. for one barrel of seed planted, although many of our truckers go much higher than this, reaching as high as 60 for one. Our truckers have recently found that it paid them to raise a second crop of potatoes the same season for seed. Last spring some of them had as high as 500 bbls. for sale which brought from \$4 to \$4.50 and some even as high as \$5 per barrel. A crop of corn or millet is often grown on the same piece of land after Irish potatoes have been taken off.

Then in many cases the ground is harrowed down smooth after the first crop of potatoes have been taken off and the land is allowed to lie idle. Instead, however, of lying idle it comes into a kind of natural grass, called "crab grass," which comes up in July and August and, in October, it often cuts from one to one and one-half tons per acre. This grass while not so good as timothy hay, is still as good as clover to feed to all kinds of stock. The Irish potato crop is a very important

one for this section and is yearly getting more and more important.

A. JEFFERS,
Editor Cornucopia.

Norfolk, Va., June 13th, 1891.

[We regret this communication reached us just too late for our issue of June 15.—EDS.]

MARYLAND WEATHER.

The following tables of our growing season, temperature and rainfall, for three years past, may not be without their interest, although two, if not three, of our chief crops will have been grown—wheat, oats and hay—ere they see light. They give the averages for each for three years:

	1889.	1890.	1891.	Mean.
B. C. Springs	74.9	74.3	73.8	74.3
Fallston.....	70.2	73.5	71.8	71.8
Baltimore.....	74.3	73.9	74.8	74.3
Cumberland.....	69.9	70	72.1	70.6
RAINFALL.				
B. C. Springs	2.52	6.40	4.16	4.02
Fallston.....	3.40	6.97	4.22	4.86
Baltimore.....	4.07	6.53	4.15	4.91
Cumberland.....	5.33	2.45	3.93	3.93

These have been selected out of the thirteen stations in Maryland making regular returns to the signal office, as those from which a fair idea might be had of what Maryland climate is.

That the signal service is becoming each year more deserving of the farmers' support, it may be mentioned that the State weather signal service corps are now adding the dates when the main crops are planted and harvested, thus giving most valuable information, that can thus be preserved for future reference. Every farmer has had sad occasion to remember that a few days difference in one or the other has taken away his profits.

In the report for 1890, Prof. Russell, in a long, carefully digested paper on "Cold Waves," brings into prominent view an easy way of foretelling their approach, viz., whenever the thermometer for a day or two is abnormally high for the season, look for a cold wave. A change has been made in the cold wave signals for Delaware, Maryland and Virginia, that they are ordered on an expected fall of 16° in the thermometer and its going down to 36° or lower. x.

BEST AND CHEAPEST METHOD OF IMPROVING WORN OUT LANDS.

The following is an essay by Maj. Howard Swineford, read before the Tuckahoe Farmers' Club, and published in the *Southern Planter*:

"To the practical farmer there is no more interesting or important subject than the best method of restoring worn out lands. The fact that they are worn out implies that they were once fertile and producing crops. Such lands are worthy the attention of the farmer, and are more easily brought back to their former value and fertility than to cultivate lands naturally poor and which require building up and constant feeding.

While these lands may seem too poor to grow even a crop of stunted weeds, yet there are elements in the soil which are ready to do good service when permitted to do so. For

instance, as long as the seed lies dormant in the land you cannot kill it; but make the soil mellow by turning it up for the action of the life-giving sun, air, and showers, then notice, if you will, the generation of millions of weed seeds.

This vital help of nature's ever ready laboratory is what every farmer has when building up the waste places. The first growth of volunteer vegetation may not be strong, but the turning of this small crop of weeds will furnish more strength to each successive crop. If this be repeated a number of times, the land will at last have received sufficient substance to furnish food for other crops. This is, however, a slow process, but within the reach of all, for the thorough breaking up of the soil is all that is needed—nature does the rest.

The application of manures and fertilizers of various kinds in large quantities is a more speedy process, but also an expensive one; and while it may be the best for the aggressive farmer, it is not the cheapest and this is one of the points asked after in our subject, and one of immense importance to the average farmer.

The practice of growing crops for the purpose of plowing them under to fertilize the soil is one that, in my opinion, has a very much greater advantage than any other, and there is no better way of cheaply improving it than this. To procure a sufficient supply of manure is, at the best, a very costly process, but a crop that may be easily grown in a few months and then turned under, may furnish to the soil as much fertilizing matter as eight or ten tons of manure per acre, and this process may be repeated several times in one year.

Manuring with green crops is not only the most economical, but, to most lands, one of the surest and most speedy means of improving the texture and fertilizing properties of the soil. Besides furnishing plant-food, the soil is made more mellow and better fitted for producing other crops. Various crops are used for this purpose; some, of course, are more valuable than others. If we may be permitted to place two at the head of the list as most valuable, we would name red clover and the cow pea, the former for general use and the latter as best suited to this locality. Among the numerous other crops used for this purpose are buckwheat, rye, oats, corn and millet.

The Hon. George Geddes, well known throughout the United States as a practical and scientific farmer, says of the clover: "If our soils require improving, we turn the clover crop under and repeat the operation until there is sufficient fertility to allow us to carry the clover off. The oftener we can fill the soil with roots, and then plow them under, and thus allow them to rot, the sooner do we expect to get our land in condition to bear a crop of grain. A very considerable part of the cultivated land in Central and Western New York has never had any other manuring than this clover and gypsum, and its fertility is not diminishing." He states that he had a field which, for seventy-four years, had been manured with nothing except clover grown upon it and

plowed in, and that this field had produced wheat, corn, oats, barley and grass. The clover thus used had, for fifty years, been regularly treated with gypsum, and that the land was constantly increasing in fertility.

Our own Dr. Pollard, late Commissioner of Agriculture, gives the following directions for improving partially-exhausted lands in the Southern States by the use of vegetable manures:

"It may be said that a considerable portions of our lands are too poor to produce clover or even a crop of grass. Then let 200 pounds of ground South Carolina phosphate and 300 pounds of kainit (Dr. Ravanel's ash element) be applied to the land and peas seeded; when grown, turn these peas under and sow clover, with wheat or oats, if thought best, and we shall be apt to get a stand of clover, particularly if the land be limed after the peas are turned under. But if the farmer cannot get the 'ash element,' let him sow peas or rye early in the fall, or oats early in the spring, turn them under in June—then sow peas, then clover."

This brings me to my own experience of the past four years in bringing to a grass-producing point a farm on which bushes and broom-straw reigned supreme. The plan most successful has been to sow rye during the month of October, applying 250 pounds of fertilizer per acre. The following spring, when the rye is in blossom, plow it down and sow peas on this fallow, applying 300 pounds per acre of a fertilizer that will produce a quick and rank growth of vines. This is the point at which the money expended for fertilizers yields the largest returns; the broad, rough leaves of the pea extract from the atmosphere vast quantities of nitrogen, which is soon to furnish the plants of the coming crop with food. (This is the only way I have been able to secure a portion of the millions of tons of fertilizing elements which our good president, in his lecture on the "Chemistry on the Farm," assured us was in the air about us.) By the aid of chains attached to the plows these vines are safely buried under the surface, and after an application of fifty bushels of lime per acre to decompose the green crops now in the soil, the surface is well-harrowed and sown to winter oats and grass. Suffice it to say, that I have not failed, with this treatment, to have good crops of both grain and grass, which have paid me for all previous expenditures while improving the land, besides having a well set crop of clover, ready as a fertilizing crop for any other.

In my opinion, this is the cheapest and best method of improving our worn-out lands.

Before closing this article, I desire to give more than a passing notice to what I consider the most important factor in the restoration of worn-out lands. I refer to the cow or field-pea. It thrives upon land too poor to grow clover. It produces a heavy and rich crop in a shorter period than any vegetable fertilizer. Two crops can be produced on the same ground in one year. It leaves the soil in the very best condition for a succeeding grain crop. It is so rapid in its growth and perfection as to

make an intervening manurial crop between grain out in the spring and grain sown in the fall. It feeds lightly upon the soil, but extracts from the atmosphere the particular elements necessary to a grain crop, and puts back largely into the soil those very elements.

Is there anything in field culture that will likely call out more quickly our admiration than a large field of this plant with its apparently solid mass of green foliage, from which spring millions of finger-like pods in all stages of growth, as many tendrils reaching after a support, while the myriads of bees enliven the scene by flying among the sweet purple blossoms which appear at the top of the plant? So wonderful and enchanting is such a scene that I cannot forbear to relate the impressions made on one of our best men when taken to one of the largest fields of our favorite, last September, and while taking in the view I have just described, involuntarily exclaimed: "O Lord, how manifold are Thy works; in wisdom hast Thou made them all; the earth is full of Thy riches!"

FEEDING ROASTED COTTON SEED.

The feeding of roasted cotton seed, which can no longer be characterized as an experiment, has given rise to so many questions regarding the manner of feeding or the quantity to be fed, that I am constantly surprised or annoyed or amused at the various views that various people take about it. As the originator of the process of roasting cotton seed, and an opportunity to notice its use for a number of years in feeding all kinds of stock and under almost every possible condition, I ought to be able to express an intelligent opinion regarding the manner in which it should be fed, the quantity, etc., but when a man writes to me to know how much he should give a mule, without stating any of the surrounding conditions, I am quite unable to make reply. The mule might be large or small, or old or young, working hard or not working at all, having an abundance of hay or fodder in addition, or possibly nothing but the roasted seed, and it must be seen that it is difficult to make a satisfactory answer to a question that involves so many conditions that the absence or presence of any one might nullify all the rest.

Roasted cotton seed is a rich, wholesome, palatable food that all animals will eat and thrive on. The raw seed contains the elements of a rich, strong food, but they are very indigestible, and but few animals can eat them, and the raw oil they contain is an element of discord in the stomach of any animal, and the lint upon the seed makes it impossible for many animals to eat them at all. The roasting process changes all this; the bitter, disagreeable taste is entirely gone and is replaced by a pleasant taste and flavor of roasted coffee—so similar that many people imagine that it would make an excellent substitute. The oil, which in its raw condition is so difficult of digestion, is changed by the heat required to roast the seed into a sort of gelatine, and bursting the cells in

which it is held, it permeates and spreads through all the meal contained within the hull. The lint, which prevents many animals from eating it at all, is nearly all burned by the roasting process, and this, when the seed is ground, can be entirely removed by shaking it in a box or pan, the lint being so light it rises to the top at once and is thrown out. The roasted seed being very dry, will keep for any length of time, will not mould, get musty, or turn sour, and it is difficult to distinguish the meal a year old from that which is ground to-day.

The proper manner of feeding roasted cotton seed is one of those problems that every man can best solve for himself, for the simple reason that the conditions existing upon no two plantations are alike. To commence with, the roasted seed or meal is a rich, wholesome, palatable food, and having it, the next question is how to feed it to the best advantage. The farmer may have oxen, cows, calves, horses, mules, sheep and hogs. If it was corn, he would use a certain amount of judgment as to the quantity, the time, place, etc., and whether it is to be fed alone or as a part ration in conjunction with other coarse or concentrated foods. Cotton seed is usually so abundant and cheap that it is the custom to throw it out with a shovel to any and everything that will eat it. Its disagreeable taste and indigestible nature make it quite certain that none will eat it to excess, and whatever is left is thrown upon the compost heap, and this is repeated each day as long as the seed lasts. But when the farmer has taken the trouble to roast his seed and put it in the best condition for feeding, he must use judgment and skill to so feed it as to attain the best results. A pound of meal from roasted cotton seed contains as much nutrition as a pound of corn, and he neglects his interests and does himself an injustice if he does not feed it with as much economy and care.

Raw cotton seed is very indigestible; the animal eating it does not assimilate all the real food it contains; it passes through them undigested and they fail to receive the proper benefit of a considerable portion, but the roasted seed is very much more digestible, and a pound or a bushel furnishes a much larger per cent. of good wholesome food. I believe its food value is doubled by being roasted; it contains no more food by being roasted, but it is in a condition to be readily assimilated, and its pleasant flavor renders it an acceptable food with almost all kinds of stock.

As a substitute for corn, it is the only food within reach of the average planter. I would advise no man to sell his corn and feed roasted cotton seed alone; but if his corn is scarce, he can carry along the work on a large plantation by feeding roasted cotton seed to a portion of his stock, or as a mixed ration to them all, and in a pinch—and many planters get there—he will find that roasted cotton seed will bridge him over a tight spot between crops in a most surprising and satisfactory manner. At the time when his corn crib is very low, corn is always high and hard to get, but cotton seed is usually abundant, it is roasted with little trouble or ex-

pense, and will take the place of corn so opportunely that he will wonder why he had not thought of that before.—C. J. Green in *Texas Farm and Ranch*.

AN AGRICULTURAL CREED.

At a meeting of Canadian farmers; a set of resolutions was presented in the form of a creed, the articles of which are applicable for adoption everywhere. Following is the creed:

"We believe in small farms and through cultivation; we believe that the soil lives to eat, as well as the owner, and ought, therefore, to be well manured; we believe in going to the bottom of things, and, therefore, deep plowing, and enough of it—all the better if it be a sub-soil plow.

"We believe in large crops which leave the land better than they found it, making both the farm and farmer richer at once; we believe that every farm should own a good farmer; we believe that the best fertilizer of any soil is a spirit of industry, enterprise and intelligence—without these, lime, gypsum and guano would be of little use; we believe in good fences, good farm-houses, good orchards and good children enough to gather the fruit; we believe in a clean kitchen, a neat wife in it, a clean dairy and a clean conscience. We believe to ask a man's advice is not stooping, but of much benefit; we believe that to keep a place for everything and everything in its place saves many a step, and it is sure to lead to good tools and to keeping them in order; we believe kindness to stock, like good shelter, is a saving of fodder; we believe that it is a good thing to keep an eye on experiments, and note all, good and bad; we believe it is a good rule to sell grain when it is ready; we believe in producing the best butter and cheese, and marketing it when it is ready."

EASTERN SHORE STRAWBERRY CHAT.

The strawberry crop, though somewhat curtailed by May frosts, proved remunerative as a whole to peninsula growers. The beginning of the season was threatened with injurious drouth, but a timely change with showers affording sufficient moisture to develop finely the better varieties, resulted in fair average yields that returned in many instances—where good culture had been given to judiciously selected varieties—handsome and satisfactory proceeds. If the Crescent could be entirely annihilated, strawberry growers would be greatly the gainers. All that is necessary to have a Crescent strawberry plant produce berries is to half plant and care for it; berries will certainly follow, a fact that enables shiftless and lazy "soil abusers" to throw upon the market a mass of stuff, a miserable apology for strawberries, that has to be sold to the detriment of better fruit. If, however, the Crescent is treated as it should be, and is by a good many growers, it is a very fair berry, and while it never commands the highest price, its extreme prolificacy gives it favor and place in nearly every plantation.

Will it produce fruit if planted alone, or without the aid of bi-sexual plants near it? It is universally catalogued as pistillate, and plant venders have always recommended the alternating of some perfect-blossom kind with it in planting. The writer has inclined to this as being strictly orthodox, though a few published statements maintaining the opposite have come under my notice. These, however, were experiences occurring "away from home" and therefore were less troublesome than a very striking instance in my immediate neighborhood this season. Happening in this berry patch when they were in full bloom, I noticed that the blossoms were apparently all imperfect or pistillate. Inquiry developed the fact that only Crescents had been planted. *None others were wanted.* Did this patch produce berries? Most emphatically yes and plenty of them. To satisfy myself, considerable time was spent in carefully examining the plants while I was in the "patch," and not a single plant bearing perfect blossoms could be found. An old farmer that accompanied me expressed his surprise at my ignorance and assured me that he had learned years back that if the old plants had been fertilized, the young plants produced by such, required no further aid in that direction!!! While I have certainly encountered a hard argument against the need of fertilization for Crescent blossoms, it still remains a truth that "one swallow does not make spring," and I would be loth to plant Crescents even yet, without providing them with pollen from some other variety.

Bubach's No. 5 and Haverland, both pistillate and wonderfully productive, are preferable to Crescent. Warfield's No. 2, on strong soil with good culture, is also very fine. Among the newer kinds, I fruited but few this season. Michel is a very hardy plant every way, but was hurt worse in the blossom by frost than any other kind on my grounds; berry about size of Crescent, and similar in many ways. Ella, put out as a new variety by the Osceola Nursery Co., of Missouri, at the modest figure of two dollars per dozen and proves so very nearly identical with Michel, that I fail to discover any points of difference.

Cameronian showed berries of fine size and color, fairly productive; will give it further trial. Leviathan, a very strong, large, healthy plant, on light soil, fails in point of productiveness; then, too, the color of berries is no better than that of Pineapple, which is ample to condemn it with market growers; the berries are fine size and flavor, but light and sickly in color. Lower, somewhat on the order of the old Wilson; quite productive, firm; a variety of much promise with me; also, Cowan, produces an abundance of deep-red berries, of good size and quite firm; plant a healthy, vigorous grower. With some considerable experience with many old and new varieties, in a five-acre plat that I wish to plant to strawberries for market next spring, will set one-half, if no more, of Bubach's No. 5. It has but one fault here, which is that it is not quite as firm as is desirable.

J. W. KERR.

Denton, Md., June 17, 1891.

THE STILL POND, MD., FARMERS' CLUB

At a meeting in the spring, Mr. E. B. Pennington read the following item, and asked the opinion of the club in regard to it:

"When asparagus begins to develop top and branches it frequently suffers from the ravages of a beetle, the damage is done by the larva or grub. The eggs laid on the plant soon hatch, and the grubs feed with vivacious appetites upon the stalks, and if left alone they will rob the stems of their succulence and cause them to wither and die. Top dress the rows with a heavy coat of refuse salt as a fertilizer; this is a remedy for the beetle. The grub when it reaches the proper stage of growth, drops on the ground and enters it, and there develops into the perfect fly. Dust the infested plant with air-slacked lime; this causes the grub to let go his hold and fall to the ground, where the salt completes its destruction. Those which escape the action of the lime and reach the condition for entering the ground, meet a similar fate in their efforts to perpetuate their kind."

Mr. W. D. Pennington said that he had tried both lime and salt and could not see that they had any effect whatever. He said that Mr. C. H. Price had packed some beetles in salt for some days, and the only effect was, he thought, it made them a little more lively. Mr. H. L. Crew corroborated this.

Mr. Harris said the beetle had caused him serious loss, as they had destroyed his two last plantings, amounting to ten acres, and he has just learned that a solution of London purple sprayed on the young plants was a sure protection.

Mr. Pennington said that this could not be used on patches that were old enough to cut, and some other remedy was badly needed. He estimated his loss last year at fully two hundred dollars, and he believes that it would pay him to have the bugs picked by hand and killed. He had noticed that neither birds nor poultry seemed to think them worth eating; and the grower would have to depend on his own efforts to get rid of them.

Mrs. E. B. Pennington asked how many hours were considered a day's work for a farmer's wife; and not a soul present was sufficiently educated to make the calculation. The following questions were then read and answered by the members to whom they were referred:

Will poultry keeping pay in connection with farming? Mrs. W. D. Pennington replied: Yes, if sufficient quantities can be raised. Small lots do not pay for the trouble.

Will the production of eggs pay the farmer during the winter months if he has to feed grain to get them? Mrs. E. B. Pennington replied: Yes, even if grain is high. Winter eggs always mean profit.

Which is the most trouble to grow, sweet or Irish potatoes? Mr. H. L. Crew said that he could not say. It would depend largely on the nature of the land; one thing he did know, and that was that it was very profitable to grow plenty of both kinds for home use.

Does overworking make butter softer and of a lighter color? Mrs. J. S. Harris said she thought that it

did, but had not sufficient experience to state positively and referred to Mrs. Crew, who said much working softened it, but she could not say whether it changed the color or not.

Is not the cost of erecting and maintaining many of our fences equal to the value of the crops they protect? Mr. E. B. Pennington said: Oh, no; not by a long way. He cited several instances in which cattle damaged even grass fields in one day sufficiently to pay for fencing one side of said fields, and in order that the proper rotation of crops might be kept, it was necessary to fence the whole farm, in order to enclose one's stock.

Who is responsible for this exorbitant prices we are compelled to pay for school books? And should not every candidate for the Legislature be required to give his constituents a written pledge, that he would vote for a law by which they would be furnished at first cost? Mr. W. D. Pennington replied that he did not know who was responsible, except the voters, and he thought something should be done. He recommended that the matter should be brought to the attention of the Farmers' Alliance, as they were in a better position to enforce their demands than the club, and could doubtless afford some relief. Mr. Barnard said he was confident that he paid three times as much for his books as they could be furnished in large lots, and claimed that the county or State should be the purchaser and furnish them to the pupils at cost. Mr. H. L. Crew said that he had been asked \$1.25 for books that of other publications could be bought for 40 and 50 cents, and it was an outrageous extortion. Mr. E. B. Pennington said that it was not only the high price, but also the very frequent changes that were objectionable.

The regular question: Are our farms tilled to their full money capacity? If not, why not? was then taken up, and opened by Mr. Harris as follows:

To the first clause of this question there can be but one answer—they are not, and the answer is plain to all who will compare the average income per acre from our Maryland crops with those of England. Granting that the dense population causes higher prices for farm products there, we will compare the yield per acre of the great staple crop, wheat, which perhaps is as fair a sample of average cropping there and here, as we can name. We find (ag. report 1885) the average yield of wheat per acre in Maryland is a fraction over nine bushels, while in England it is 28 bushels. Similar proof can be found by comparing our yield with that of France, Hungary and other continental countries.

The answer to the second clause is more of our omissions and neglects. Many of us pay too little attention to selecting such crops as are best suited to our land, and such that will net the average income. Another reason is our failure of thorough culture. Another and the last reason I shall name, is our neglect to properly feed our crops. While our most successful wheat growers raise crops equal to the average English farmer, there must be many whose crops are below our Maryland average, not only of wheat but of all

our crops. It is much easier to name these reasons for small crops and small profits, than to prescribe and apply the remedy. But we will briefly consider the last one. To tillers of the soil, the means by which to increase our crops with the most economical outlay, is the all important subject at this time of general depression; that there is need of increasing the productiveness of our lands, no one doubts; and that we can by the use of the proper means increase our yields, no one questions. But the great difference in the kind of soil, even on different parts of the same farm, makes the intelligent, economical use of fertilizer somewhat of a complex question. A knowledge of the nature and needs of the soil to be treated, is really the first and very important requisite in successful cropping. Since science and experience have demonstrated the fact, that the three elements, nitrogen, potash and phosphoric acid are the chief needs of our growing crops; and the wisdom of our law-makers, has, for the protection of honest fertilizer manufacturers, as well as for the benefit of their customers, the farmers devised laws requiring all fertilizer packages to bear testimony as to their contents, any farmer can, with a little pains in experimenting, soon convince himself in regard to the deficiency of his soil and the needs of his various crops. And having obtained this knowledge, he can more economically increase the yield of his crops. With the farmer's present surroundings, pressed on every side, the economy and abundance with which his plant food is supplied is a pivot on which the scale of success or failure turns. If our long tilled land is not liberally helped, our crops must necessarily be small and our profits nothing. And it is sometimes the case, that with these elements freely supplied, but at such great cost as to leave no profit to the farmer, but abundantly supplying the requisite plant food in the most economical way that experience and science can show to us, is a lever that will help lift us from poverty to plenty."

There is one encouraging fact in connection with this subject, and that is that while the grain acreage of our country was so greatly increased from 1870 to 1881-82, running our surplus for export up from thirty-seven million bushels to one hundred and forty-seven million bushels in ten years, when our wheat area reached thirty seven million acres, beyond which it has not materially increased in the last eight years; the average yield per acre in the great wheat-growing West has fallen off from two to four bushels per acre, showing a decline in the fertility of the great West's virgin soil. Since the wheat area of our country has ceased to extend, our population and demand for home consumption is rapidly increasing, and gives promise of better prices in the near future, when at the present rate of increase of our population and our present yield, it will require every bushel of our wheat to supply the home demand. We are fully convinced, not only of the advisability, but of the necessity for liberally supplying plant food for the

most profitable cropping of our land. Experiments have not as yet pointed out and settled the best mode of supplying to the growing crops the elements necessary for the largest possible yield, but a great change is taking place in practice. Farmers are using fertilizers composed of less costly ingredients than was the custom ten and twenty years ago, when a large percentage of costly ammonia was depended upon for results. The practice now is, to use a large percentage of phosphoric acid, a much cheaper ingredient, and practice a proper rotation of clovers to gather for the soil at much less cost, a valuable supply of nitrogen for the following crops, provided the clover is allowed to mature. We do not recommend the abandonment altogether of what may be termed the ammoniacal fertilizers, because the crop to be raised and the kind of land will in a measure decide the kind of manure to be used and the quantity to apply. Applications should be made as large as the land can make use of in producing the crop, and as long as the increase is at a profit above the cost of application, for the cost of cultivation to produce a small crop is about the same as for a large one. What would be liberal for wheat or corn, would be light for vegetables or fruit, and what would be liberal, particularly of ammonia on sandy land, would be less than could be made use of at a profit on stiff land. Of this we are fully convinced by personal experience having applied different quantities on adjoining plots of measured ground and measured the separate yields, and found that the profit increased to a much heavier application on stiff than on light land. I have used high-priced ammoniacal fertilizers by the side of acidulated South Carolina Rock, 15 or 16 per cent. phosphoric acid, costing about half the money, and put on the same number of pounds to the acre without any perceptible difference in the yield. Quick-growing crops, such as vegetables would doubtless give different results, and all kinds of fruit are strong feeders and can use up what would be excessive applications for ordinary farm crops. The almost positive certainty of small crops justifies the application of from 600 to 1,000 pounds or more to the acre but the uncertainty of the crops of larger fruits, such as peaches, pears, apples, &c., makes the use of fertilizers as we use it on the other crops and in such large quantities as these ravenous feeders will pump up, a matter of questionable economy. How to sufficiently feed our orchards is an important question. We all know that pure stable manure supplies the needs for the growth of trees and assures the certainty and fine quality of the fruit as well if not better than anything that is commonly applied, but the supply at our command is short of our need. The Italian or scarlet clover, or winter clover as Mr. Neil calls it, being an annual and usually sowed after orchard and corn cultivation has ceased, say in July, and making its growth during the autumn and open weather of the winter, maturing sufficiently early in the spring to be ploughed under at the usual time for tilling orchards or prepar-

ing the ground for corn, makes it a plant of great promise, particularly for orchard manuring. The amount of plant food it contains, according to the experiment of Dr. Neil at the Delaware station last year, is much greater than any other leguminous plant introduced on our peninsula, and has for the last three years been used to their great satisfaction by leading farmers of middle and lower Delaware. The fact that it draws mainly from the subsoil and the atmosphere at a time when the trees are dormant, its life's supplies, and stores in its matured leaves, stems and upper roots so large a supply of nitrogen just at the time the orchard are beginning to make their annual draft on the soil, makes this clover of very great promise as a convenient and cheap means of increasing our crops."

Mr. N. Barnard said he was convinced that our farms were not tilled to their full capacity and he thought that it was because we did not cultivate enough, he said he did not know but that it would be better for us to give away half of our land and put the full amount of labor on the other half. He thought that if he were deprived of either, it would be better to be deprived of manure than of cultivation. Mr. Harris said, if Mr. Barnard wanted to give away he was ready to take it. Mr. Barnard answered that he was not quite ready yet, as he wanted to try the scarlet clover, it might cause him to change his mind. Mr. E. B. Pennington said that he had been thinking why he had not tilled his land to its full capacity, and he had concluded it was because it would not pay. He said if he could get \$1.25 for wheat and 60 cts. for corn he would increase his yield and so would many others. Mr. H. L. Crew said he was doing all he could to get his land up to its full capacity and thought if he could get better prices for grain he would get there sooner. Mr. W. D. Pennington thought that Kent county farms were pretty well farmed and that profits were too uncertain to justify a much greater outlay than was at present applied. For our report we are indebted to the Transcript.

FUNGI ON FRUIT TREES.

J. D. Morrow writes as follows: Our knowledge of plant fungi, like our microbe theories, is but limited and imperfectly understood; but every year a few additional points of light are thrown upon the subject. In a general way we know that fungi are injurious to fruit trees, and it would be a great point gained in our agricultural economy if some effective rules of combating them could be discovered. In earlier days plant fungi were supposed to come into existence through spontaneous generation, but observation and experiment have shown this assumption to be false and misleading. Fungi are plants, and they go through a series of generation, growth and development the same as any of our cultivated plants in the garden. The individual fungi produce seeds, which we call spores, and these produce other plants of like nature. Fungi are also dependent upon the conditions of the temperature, moisture and the proper supply of of nutrient

material for their growth, and where these conditions are lacking the spores fail to germinate, and the fungi gradually die out. A change in the temperature, or food material in a certain orchard will often result in the death of the fungi. According to the old theory this was "spontaneous extinction" but it had its cause well grounded. There is no such thing as spontaneous generation or extinction, as those terms are generally understood, but all of the fungi—the molds, rust, mildew and smuts—come into existence and follow out their course of life and death within limited bounds, and according to definite laws as regularly as do the higher plants and animals.

The fungi are not yet well classified, for the number of different species is exceedingly great. Most of them cannot be seen, except under the microscope, but those which are visible to the eye are doing a great amount of destructive work to our grain and fruits. These visible fungi always attack the plants from the outside, and where there is a perfect protection from a thick unbroken skin, their attacks are often resisted. This is why some thick-skinned varieties of trees are never attacked by fungi, unless wounded by some outside cause. With some varieties of fungi, moisture is necessary for their development, even after they have attached themselves to plants, and if not supplied with moisture the spores will inevitably die. Protection from dews and rains will thus often save fruit trees from the attacks of fungi. "Bagging grapes" is an illustration of this. If decayed fruit is left on the top part of trees spores of some fungi are sure to develop there, and spread over the tree, attacking other fruits wherever there is a rot or crease in either tree or fruit. Fungi thus spreads over the peach and pear orchard, and causes the dreaded "rot."

To find these spores successfully, and to prevent blights, rots, smuts, molds and mildews, one should not depend too much upon fungicides, or those substances that are destructive to fungi. The use of these mixtures is not to be condemned; but when all other treatments are overlooked they fail to answer the purpose for which they were intended. They are merely to supplement other and more lasting treatments. Fungicides will have to be used every year, if no preventive measures are adopted. The first work is to go about and secure better cultivation for the trees and plants. Good, healthy trees, with a clear, thick, unbroken bark, will rarely be attacked by fungi. As weeds can be exterminated by a thorough gardening, so can fungi be extinguished, or kept down. If there is a negligent neighbor, whose orchard is full of destructive fungi, the matter becomes more complex, but the best way is to induce him to adopt your plan, too. When the bark of the trees are then broken, cover the wounds over with some bandage to keep the moisture out. In very wet seasons, when mold and mildew begin to show themselves, protect the fruit as much as possible from the wet. In the case of small fruits they can often be bagged, especially grapes. Understanding the general principles of fungi life and death, one may combat these

pests more intelligently, and often prevent great losses in the garden or orchard. Rust on wheat is frequently killed in the same way. It owes its existence to the peculiar weather, and to the lack of certain mineral substances in the general make up of the plants. The former makes the fungi more active in its growth, and the latter makes the wheat plants more susceptible to their attacks. The former cause cannot be removed by man, but the latter can by a different method of cultivation.

Prof. Pammel says that in this country botanists have not given the subject of root disease nearly so much attention as in Europe; yet from an economic standpoint, some of these are of great interest. The root disease of the grape, root of the cotton, sorghum blight, bacterial disease of corn, and others affecting the roots of plants in this country are well known. The most practical way of dealing with diseases of this kind is a judicious rotation of crops. The testimony that is where cotton is planted year after year on the same soil the "root rot" becomes more serious. Much still remains to be learned about the different root fungous parasites in order to decide definitely upon the most rational method of treatment.—*Western Farmer.*

INSECTICIDES.

A very good preventive, not strictly an insecticide, is pure raw ground bone sprinkled on the leaves of plants. Its evil odor repels them. Tobacco dust or stems will often answer the same purpose.

Paris green is an arsenite of copper, and contains about fifty-five per cent. of arsenic, but the proportion is somewhat variable. This substance was first used for destroying the potato beetle, but is now used to destroy any other insects which eat foliage. It retails at about twenty-five cents per pound, but when bought in quantity may be had much cheaper. It may be applied either in liquid or dry form. When used as a liquid it should be mixed with water and applied by means of a force pump. As it is practically insoluble in water, care will be necessary in making the mixture and in keeping it well stirred while using, in order that the poison may not settle at the bottom. In mixing either paris green or london purple it is better to add only enough water to form a thick paste, and then when the poison is thoroughly wet, add sufficient water to dilute as may be desired.

The proper proportion to be used varies with the plants to which the liquid is to be applied. For spraying apple, pear, plum and cherry trees, one pound of paris green to 200 gallons of water should be used, though when the foliage is young and in a waxy condition a stronger mixture can be used than upon older foliage. When used upon peach foliage the proper proportion is about one pound to 250 gallons of water for the first application, and one pound to 300 gallons for a second application.

When mixed with water, paris green is an excellent application for codling moth, curculio, fall webworm, potato beetle, leaf rollers and

various other leaf-eating insects. Paris green may also be used advantageously in a dry form, either alone or mixed with flour. In the dry form it is the best application for the cotton-leaf worm. It is easily applied pure by being sifted through bags placed at the end of a long pole as described in Bulletin No. 12 of this Station, or if mixed with flour and applied when the leaves are wet with dew, the "Roach Poison Distributor" will be found a satisfactory machine.

London purple is an arsenite of lime. Being a waste product in the manufacture of aniline dyes it is very cheap, being sold at less than one-half the price of paris green. It contains a smaller per cent. of arsenic than does paris green, but for many purposes is equally good. It is used in the same manner and for the same purpose as paris green. Many prefer it to the latter because of its cheapness, but as it is more liable to cause injury to foliage it should not be used upon tender plants nor upon peach trees.

Tobacco is used with much success in some cases.

A decoction can be made by pouring four gallons of boiling water on one pound of leaves and straining when cold, after which it is applied by means of a pump. Tobacco is especially effective in destroying lice upon cattle and poultry.—*Miss. Ex. Sta. Bulletin.*

WATERING AND MULCHING.

With newly set trees the first summer is always the most difficult. It requires more time for the roots to penetrate the soil to a sufficient depth to receive plenty of moisture. For this reason in many cases and especial in dry season it will be necessary to water or mulch if a healthy, thrifty growth is maintained.

As a rule it is not best to mulch until the early part of summer, it being better to water before this if necessary.

With trees as with plants one thorough watering soaking the soil well around the roots, is of more benefit than three or four sprinklings of the surface, and for this reason it will pay to take a little more time at once and water well than to sprinkle every night for a week.

A good plan of watering trees is to pour a sufficient quantity of water around the trees to thoroughly soak the soil, doing the work late in the evening, having worked the soil into a good tilth before. Then, early in the morning, before the moisture has had an opportunity to evaporate, with a rake or hoe, draw a mulch of fine soil over this. Ordinarily, one watering a week if done thoroughly will be sufficient. If convenient, however, it will be necessary to continue until there is a good rain.

With mulching the soil should be stirred in good tilth and the mulch applied, spreading out some distance from the tree. Bagasse from a sorghum mill, old straw or hay, forest leaves, or old corn stalks can be used. Bagasse or old straw is much the best; it is not readily blown off by wind, sticks close to the soil, and will aid materially to retain moisture in the soil.

In nearly all cases mulching in

• good season lessens if it does not entirely avoid the necessity for watering during the summer; and while in some cases it may not be necessary, yet, as a rule, it will pay to apply with all trees set in the spring, whether fruit, shade or ornamental. But to secure the best results it is necessary to do in good season.—*Treegrower.*

STRAWBERRY PLANTS IN SUMMER.

Amateurs starting new plantations of strawberries for home use, if planted the past spring, will need only to direct the new runners along in line with the planted rows, so that for a width of eighteen inches or so, the whole ground gets uniformly filled with plants six inches to a foot apart.

Beds kept in this shape are more easily managed, and give greater crops than in any other style known. To grow them on the single plant or hill system, keeping all the runners cut off, will, provided they are properly protected in winter, perhaps produce the largest berries, but the row system, if they are not allowed to mat too much together, will bring strawberries large enough to suit all but those of a fastidious taste. When allowed to grow the greater abundance of foliage gives them nature's protection, their own leaves, which with a very little added suffices to secure them against the worst winters in any part of the country. Another thing, a renewal of the plantation at least every third year preferable—every second year, except with very clean culture, is most satisfactory. So those who want to be sure of a good supply will need to replant a half or one-third of the area each year, selecting new ground each time.

The best way of all to secure young plants is to sink a small flower pot into the ground, lay a runner on the pot, fastening in position by a peg or stone until rooted, and when the roots have filled the pot cut from old plant, and the new one is ready to plant in new a position.

Plants grown this way can easily be made to produce a good crop of fruit by next summer, and is worth considering by new beginners.—*Prairie Farmer.*

ROSE LEAF CHAFFER.

This brownish beetle, about half an inch long, (*Macrodactylus subspinosus*, Fabr.) is very destructive this season. I have observed it on the European Bass Wood in great numbers, eating both leaves and flowers. On some sweet cherry trees they had entirely eaten up a large portion of the fruit and leaves. They are destroying many rosebuds and leaves, and in some places have eaten up the young berries and leaves of the grape, especially Concord.

It began in the spring on the magnolia and migrated to trees of other species as fast as they began to bloom and fruit. In a few instances they have attacked peach trees, but no serious damage has been reported yet.

I have found the kerosene emulsion efficient in killing them. It is easily made and applied with a garden syringe. Dissolve a bar of soap (any common kind) in a gallon of water. Pour this into a vessel that will hold

about fifteen gallons. Add a couple gallons more of water, then pour in three quarts of kerosene. With the syringe in hand, draw the kerosene into the syringe from the surface and force it out violently back into the soapy water. This, if repeated several times, will make a white, milky mass in which the kerosene remains suspended equally throughout the mass. It is then said to be emulsified. Add to this eight gallons more of water and churn again with the syringe a few times and it is ready to apply. Any force pump is equally good in applying this mixture. The kerosene thus emulsified cannot damage the foliage. If applied alone it is sure death to plants.

Spray this on the trees, vines or bushes till thoroughly wet with it. The bugs will soon begin to fall to the ground dead. If they return in a week or so later repeat the application. THOS L. BRUNK.

College Park, Md.

THE WORK HORSE.

The horse is about the most neglected domestic animal, says the *National Stockman*, we have on the farm. I have known farmers to say that it was a waste of time to clean a horse. They would scrape the manure off them and work them all the time. Ten minutes each morning spent in cleaning a horse will make him look a great deal better, as if some one owned him. This winter grain is bringing a fair price and a great many men think they can't afford to feed the horses grain, and think they are economizing to keep the grain and sell it for a good price. Now, I can't see where they are economizing, for their stock will be skin poor all the time and it costs more money to keep a horse poor than it does to keep them fat. I think it is cheaper to feed up and get horses fat before spring work commences, and then they can do more work on less feed and a great deal easier.

The great mistake is not keeping horses warm enough in cold stables, where the snow blows on them, with very little bedding under them. Why do such men's horses look hard and they complain it costs so much to keep their horses? If they would fix their stables, use more bedding for their horses and good warm blankets on them, and a little more feed, I think their horses would look 50 per cent. better. A warm stable and a good blanket will save grain, and the horses will have more "get up" to them. I think a good feed for horses that is cheap is to use more oil meal—oil meal, corn meal and bran mixed, equal parts, that is pound for pound, as follows:

100 pounds oil meal. \$1 40
100 pounds corn meal, worth. 1 25
100 pounds bran, worth. 1 10
\$3 75

A mixture of this kind will furnish feed for two horses about three weeks, and they will thrive on it.

Every owner of a horse should discontinue the use of blind bridles, and there would be fewer skittish horses. There should be an improvement in the care of the horse. We should keep our horses better and keep better horses. Would like to hear from others on this subject.

The American Farmer.

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Maryland State Farmers' Association.
Maryland Horticultural Society.
Maryland Dairymen's Association.
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BALTIMORE, JULY 1, 1891.

OUR OFFICE.

Our friends will remember that our location has been changed, and that we are now to be found at the Northwest corner of Baltimore and North streets, Baltimore, opposite the *American* and *Sun* buildings, with entrances at 228 East Baltimore and 6 North streets. The sign of "The Golden Plow," which has long designated our whereabouts, has a conspicuous and glittering place over our North street doorway.

MARYLAND WEATHER CROP BULLETIN No. 1.

For the week ending June 26, 1891.

(Issued under the auspices of the John Hopkins University and Maryland Agricultural College, in co-operation with the U. S. Weather Bureau.)

NORTHERN CENTRAL MARYLAND.—The total amount of rainfall for this portion of State was slightly above the normal.

The temperature for the week was slightly above the average and was beneficial to all crops. The amount of sunshine was also greater than usual.

Reports indicate that the weather of the week has been very beneficial to crops in general and particularly to wheat. The general verdict is that the crop of wheat will be an average one as to quantity, and considerably above the average as regards quality.

SOUTHERN MARYLAND.—The rainfall, which was general in the early part of the week, was about the normal, and fairly distributed. Its effect on corn and tobacco,

and growing crops, generally was beneficial.

Temperature and sunshine were about the average, and beneficial.

Crops seem to be in a thriving condition, and wheat is being harvested with an average yield.

EASTERN MARYLAND.—The rainfall for the week was somewhat above the average, but its distribution was such that it was very beneficial to all growing vegetation.

The wheat harvest is now in full blast, and report shows that with but few exceptions the crop will produce a fair yield and of fair quality. Fruit is growing nicely. The weather conditions have been, and are excellent in every respect for the growth of all kinds of vegetation.

WESTERN MARYLAND.—The weather was quite rainy during the early part of the week. The temperature and sunshine being about the average, were beneficial to crops. No damage from rain is reported.

DELAWARE.—While wind and rain-storms were reported in the South as injuring the wheat, the weather was generally fair. The temperature and sunshine being about the average, were beneficial to crops.

SPLENDID PEACH PROSPECTS.

A meeting of fruit-growers, held at Middletown, Del., on June 18th, was very largely attended. Practical steps were taken, and the information gathered gives promise of an enormous crop of fruit for the present season. The following information relative to the outlook was gathered:

Mt. Pleasant 50,000 baskets; Townsend 75,000; Clayton and Smyran 200,000; Brenford 250,000; Greenspring 50,000; the crop from Dover is large as far as Felton; Bridgeville 10,000; Sussex, total failure.

Mr. Pennindton lives in Queen Annes close to Talbot and says the lower part will yield 300,000 baskets.

Samuel T. Earl said Centreville station would have 200,000 baskets or peaches and 20,000 of pears.

Geo. Biddle and ex-Gov. Groome, of Cecil, said there were few trees in that county, but there was a good crop, the white fruit especially.

W. P. Biggs reported that 300,000 baskets would be shipped from Sudlersville, 300,000 from Millington and 400,000 from Price's station.

Dr. Black said New Castle county would have a full crop.

S. T. Graham, of Felton, had interviewed every grower from that station and said there would be 250,000 baskets, from Wyoming 50,000.

Mr. Fitch, of Wicomico, said there would be a short crop there, not even a carload. Somerset was reported likewise. Caroline was reported as having a small crop.

Samuel Mann, from Lynch's Station, said there would be about 120,000 baskets.

From Chestertown it was stated would be shipped 200,000 basket; Nicholson's, 75,000; Worton, 50,000; Kennedyville, 150,000; Black's 50,000; Gale's, 100,000; Barnard's 40,000; Betterton, 80,000; Harris', 80,000.

Steven Boyer, of Sassafras, said he had plenty of peaches; the trees were overloaded and breaking down. Robt. S. Griffith said the pear crop never was better and the trees were free from blight.

SOME GOOD GRASSES.

Dr. C. D. Wood, chemist of the Storrs Agricultural School, in an address to farmers and dairymen of Connecticut, spoke about some new grasses and of fertilizing grass lands. He said that timothy and red top are, and will likely continue to be our standard grasses. Species that will mature at other times makes it possible to secure all the hay at the best period of growth and maturity. Among the grasses tried at this station five of them were found to be of much value. Orchard grass is adapted to many soils, is early, a strong grower and with a tendency to grow in tussocks. Tall meadow oat grass is about as early as orchard grass, is tall, a vigorous grower, and two or three crops may be cut in a season. Tall meadow fescue known as evergreen grass, produces a heavy succulent growth, and is valuable for moist meadows. Fowl meadow grass is late and remains green long after it is ripe. It may be seeded with timothy with advantage. Perennial rye-grass makes a good bottom growth and is good to seed with tall, slender growing kinds. It is known that plants containing much protein or nitrogen are valuable for fertilizing, also for feeding purposes, as about four-fifths of the fertilizing elements pass into the excrements. The legumens are the best, and to this family belong clover, peas, alfalfa, vetches, etc. They have the power to obtain large quantities of nitrogen from the air and subsoil, and these are valuable for green manuring or they may be fed and the manure put back on the land. Experiments were tried this year in fertilizing grass plots. Two plots were left unmanured, and to the other muriate of potash at the rate of 150 lbs per acre and dissolved bone black at the rate of 300 lbs per acre were put on, and to the six plots in addition nitrogen in form of nitrate of soda or as sulphate of ammonia was put on at the rate of 75, 50 and 25 lbs per acre. Clover grew best, and most on plots manured with mineral fertilizers and diminish relatively with the amount of nitrogen supplied. The value of hay per acre at \$12 per ton was as follows: From the unmanured plots \$12, mineral fertilizers alone \$21, minerals with 25 lbs nitrogen added \$30, with 50 lbs nitrogen \$36 and with 75 lbs nitrogen \$37.50. The minerals were applied at a loss of \$1.50 per acre and the 50 lbs of nitrogen at a profit of \$6 per acre and the others in proportion. The percentage of protein in the hay from plots to which the nitrogen was added was also greatly increased which would make the feeding value of the hay better. These are interesting experiments and it would be a good plan for farmers to try it themselves upon their own grass lands.

INQUIRIES.

I wish to inquire of some one of your readers who may be familiar with the matter, concerning the following subject:

1. Would a good stand of Italian or scarlet clover be secured by sowing in tobacco and corn land of ordinary

fertility at the last working, say last of July or even first of same?

2. What are the best varieties of strawberries for an acre of land planted for profit in Southern Maryland, and what would be the best fertilizer for the same, and from whom could plants be obtained, and at what cost? I know that strawberries are raised with profit in Anne Arundel County, and we should be able to do the same here.

INQUIRER.

St. Mary's Co., Md.

[We hope our readers who have experience will reply.—Eds.]

HOME DEPARTMENT.

The What To Do Club.
OUR MOTTO.

Do what you can,
Not what you cannot;
Not what you think ought to be done,
Not what you would like to do.
Not what you would do if you had more time,
Not what somebody else thinks you ought to do
But, do what you can.

It is my misfortune rather than fault, that when I am extremely interested in one particular thing I lose sight of all else that is not at hand to jog my memory. This spring I have had some improvements going on in and about the house so that the other "home department" has escaped my mind each time just when it required attention. I hope this will be accepted as an excuse for my absence.

May I tell you just what I have been about? I take your assent for granted and begin with the outside. As there had to be a new fence along the front of our lot since fence there must be I plead for one of those open wire ones instead of the time-honored palings, which I hope time will grow weary of providing before another century begins. The wire fence we have is just as good protection against other peoples' dogs and cows as any, and it has not the painfully monotonous effect. My lawn and flowers are as much for the benefit of the public as for ourselves, and so the public can see them without being impaled. The making of a new fence showed the way for another improvement. We have until now had the gate exactly opposite the front door, with the gravel walk leading straight from one to the other, and a branch turning just at the steps of the porch to go around to the side door. This is the stereotypical plan of our town, from which I departed by compromising between the front door and the corner of the house. The gate being about half way, the path branches as it approaches a little more than half the distance between the house and the street. This lends some grace to the necessary curving, and it obviates the necessity of passing the front door when, as often happens, my brother or any one styling with us come home as guests are leaving, or sitting on the porch summer evenings. It affords a measure of privacy both ways without the ungainliness of two straight walks.

The improvements indoors have been to get rid of as much of the dark papering of the walls which was so popular during the past few years. And also to cover my floors with fine matting all over the house.

This is a recantation of a long-cherished creed. My early home was made up of a house full of children, mostly boys, and the experience of matting under such circumstances was such as to make me forswear it evermore, but, I learn, as I grow in years, to make allowance for conditions, and I guess it will be a long while before we staid elderly people will kick this matting out, especially as it is better than any we could get in those days. I intend it shall stay on the floor till it does wear out. In winter I will cover it with carpets or rugs, and when they are removed have it wiped with salt water. Oh, how sweet it looks and how easily kept clean. Wherever it was admissible I have had the doors lifted from their hinges and set away, in some places substituting thin white or cerise curtains hung on poles. Any one who was familiar with the house a year ago would not know it now, yet the changes are simple and not expensive, but they are decided changes for the better. How I should like to spend an evening with you all just here. AMANDA A.

It used to be only lovers and silly young married people who were "spooney," but now the contagion has spread like wild-fire, and all the world may be said to have caught it. Every possible excuse for taxing one's purse or one's friends is made available to secure some kind of a spoon. Silver spoons and gold ones too, are levied upon with about the same assurance with which young people in the past demanded buttons for memory strings, and later, ribbons for memory hooks. We can only surmise as to what will be the next craze. If only it takes the form of town lots, we may live to see some of the numerous suburban sub-divisions become populous cities. For the benefit of those who go a journeying this summer and want to gather *souvenirs* from every stopping place, and those who stay at home expecting those who go away to bring them such mementoes, I will give a few of the varieties that are most in demand: These are "berry spoons," shaped like a leaf of some kind; "soup spoons," like shells; "ice cream spoons," small with a spade-like edge; "orange spoons," similar, but the bowl longer and the edge sharp; "bon-bon spoons," with flat circular bowls, shut handle, flat, quaintly shaped tops and a ring attached so they can be hung from the girdle; "coffee spoons" and miniature tea spoons. Most cities have made capital of this fashion by having some design of historic interest which will plainly indicate where the spoon comes from. In this way travelers of every description are beguiled into buying for themselves or somebody else.

The most sensible form the fashion has taken is when anniversaries are so marked by the different members of the family, such as birth days, wedding days, etc. It is far better than throwing money away for perishable things. I know a husband who gives his wife a spoon each time he has a satisfactory business transaction. I hope our husbands will make a note of this. It is the best kind of spooning and worthy of imitation. HELEN BLAZER.

WITH our reputation for gossiping it will not be strange if I repeat the latest bit of news that reached me this morning: "The Hammets and Joneses pulled out for Oklahoma yesterday." And so the exodus goes on. Surely a year or two more and this country will be depopulated; five hundred people, the assessor reports, have left three townships in this county the last year.

I cannot help feeling sad and lonely when I look at these deserted homes, and I cannot help seeing them; they are all around me; the roofless sod-house, the breaking overgrown with weeds and turning back to sod; the heap of white clay marking the spot where the well was dug; perhaps a few sickly-looking bushes or bunches of asparagus is all that remains of the attempt to establish home. Here merry barefooted children ran over the prairies hunting the curiously-shaped cactis and found them to their sorrow when least expected. Fathers plowed and planted; mothers made gardens, tending them with care, but spring after spring "hope cheated" them with her promises that "this year there will surely be a crop" and at last, sans clothes, sans money, sans hope, they "pull out for green fields far away."

It is said as a truth one hardly dare dispute that it takes "three sets of pioneers to make a permanent population." There are always exceptions, and many of the first settlers here I know came to stay if possible.

Some had but a few dollars in their pockets, and all their goods in a covered wagon; others had sold small but productive farms in the East and brought their goods out by the car load, stock, farming implements, furniture, grain enough to last a year. Some mortgaged pretty suburban homes expecting to pay it off when these broad acres would yield a rich harvest. Sod school-houses were built, Sunday-schools organized, literary societies met every week, each one contributing their share to amuse or instruct. Nor were musical instruments wanting; some brought pianos with them, many had organs, and could sing and play well. All were filled with hope and "great expectations," but "hope deferred makes the heart sick" and one after another are seeking homes in a more favored locality.

Moral: If you are doing reasonably well, stay where you are.

Let me congratulate "John E. Cake" on his wise decision when he left the mercantile ranks for agriculture God's chosen employment for man. If I were asked what would be my plan for ameliorating the condition of our race, I would say give every man a chance "to sit under his own vine and fig tree," or in other words give every man ground enough to raise all the fruits, flowers and vegetables his family could use. There would be less idleness, less misery and crime, fewer millionaires, fewer paupers.

LOUISA FUNSTON.

Gove Co., Kansas.

"Ma, your bread is so good," one of my boys remarked, helping himself to another slice. "Yes, I said, in fun, 'that is the kind your mother used to make,' and it was nice, if I do say it that should'nt. White

with a yellow cast, fine and light, not coarse and dry; the crust soft and thin, and above all a good, sweet taste and this is the way I made it: I put four quarts of buttermilk in a granite preserving kettle, set it over the fire to get hot (don't let it boil) when the curds rise to the top lift them out with a perforated skimmer. (I give them to the chickens.) When cool enough to put your hand in, stir in flour till it is a good thick batter; add a yeast cake previously dissolved in warm water; give the batter a thorough beating, cover over and set away for the night. In the morning add salt and half a teaspoonful of soda, dissolved, for fear of any acidity; mix well, pour the sponge into the flour, knead it into a stiff dough, work it well on the bread board till nice and smooth; but it back into the pan; cover over; set it in a warm place to raise. When up to the top of the pan push it down and let it raise again; mould in two loaves, without adding any flour; if just right it will not stick to your hands. Let them raise till as large again as when first put in the bake pan. I like each loaf in a separate pan so that they will have a nice brown crust on all sides. I generally bake mine on pie plates. This recipe for mixing bread with whey may not be new to any of you; if not, I should like to know if you have been successful in making good bread in this manner. In saying good bread I mean as good as can be made out of the fine white flour the most of us have to use, because we cannot get flour made out of the entire wheat, of course rejecting the bran, that being more or less indigestible.

To the sisters who are kindly interested in me, will say my old home was Philadelphia, Pa. Twenty-one years ago we came West; have lived in Iowa, Missouri and Nebraska, and the last four years in Kansas. L. F.

BESSIE asks about our new correspondent, Mrs. Funston.

Mrs. Funston was our neighbor in New Jersey about twenty years ago. How pleased I was to see her name enrolled. As a child I remember the "pretty woman" like a cameo, who lived opposite in the little white house, under the alanthus tree. We were sent over there to spend the Fourth of July nights when our little house overflowed with city company. S. D.

TAKEN in its literal sense, I suppose the signature, "A Stranger," might seem misapplied since it has so often appeared to readers of THE FARMER, and though I have labored long and earnestly in your midst, it seems we must be "strangers yet," for there is a lack of understanding and appreciation of any efforts in your issue of June 13th. Better people than myself have suffered for the truth, and I shall not grow weary in well doing; it is the "summum bonum." As we look back on our lives we will find the only time when we have really lived all the moments when we have done things in a spirit of love. Now as to the great, grand philosophy of simple ways of living, I have endeavored to make it plain to all; if I have missed the way or lacked the gift to explain it

simply, it has not been from want of earnest endeavor. The idea did not originate with myself, but thousands can testify to its results, and with myself look upon it as their salvation. Surely it is a loss to those who will not accept the truth. Simple living does not necessarily mean light living, though it excludes grossness. To be perfectly constituted, the body must have food which will provide for it in proper quantity all the elements of which itself is made up. All the elements must be supplied in order to nourish brain, muscles, nerves and the tissues generally. It is a question for argument whether the best food for man is to be found in animal flesh. One thing is certain, there must be a due supply of nitrogen, carbon, hydrogen, oxygen and certain salts—one or two of these elements alone will not answer.

Now, animal food cannot claim for itself alone the high estate of furnishing these substances to humanity. The grains, fruits and vegetables provide albumen, caseine and fibrine, pure and good, far more so than that obtained from animal food and with no danger as to disease; they contain also the chemical inorganic salts. The majority of persons are not intelligent in this matter. They eat in a hap-hazard way, not knowing how to select the proper constituents and from the purest sources. Some prefer the stimulation (animal food), and as a result depression follows and the vital forces fall below the normal standard and there is a call for a repetition of the article that made them feel vigorous. This can be overcome if they will but listen and learn. Almost everyone desires, if they do not aspire to, long life, and the only means to attain it is by refraining from excessive as well as improper indulgences. The men of the most athletic frames and constitutions, the farmers, break down early, not exclusively by being worn out by hard labor, but, in great part, by their overfeeding three times a day on flesh meats, especially pork; and there is no doubt if they and all the rest of the people were from their youth up compelled to live on half the food which they consume, and that food much plainer and more simple, containing all the life-giving elements, they would complain less of the effects of hard labor and the infirmities of age. Accept, then, and work, my friends, for the highest and the best. Happiness is not found in gratifying present appetites and passions, but in building strong, firm foundations for future good.

A STRANGER.

Sand Hills, Augusta, Ga.

NOTHING.

FRUIT CRACKERS.—Thicken cold mush with chopped cooked fruit, rolled. Then baked.

HOME GYMNASIUM.—Bore hole in door-way for one side of bar, cleats for the other. Hang up old hoe handle to be used for horizontal bar.

PERFORATED PANS FOR COOKING.—Take a small round nail, and hammer holes in your oldest pie pan. Mark diagonal lines out crossing at center and perforate close together. Pastry is much finer baked in this way.

OATMEAL ROLLS.—Cold oatmeal, cut in thin circles and folded; bake.

MEDICINE CHEST.—Beer bottle to fill with hot water; Sand-bag made of old flannel and filled with brook sand; old kid gloves for sore fingers.

SALAD CUPS.—Let lettuce grow to head by taking outer leaves only for use; never pull up root. The heads from cups fill with salad.—French.

MOCK TURTLE SOUP.—When there are cold, hard-boiled eggs, cut them in small squares, (fried eggs are as good) make a brown broth with some gravy and browned bread, strain; add small squares of different kinds of meat; boil; grate in lemon peel. The broth must be thick; pour over egg and serve.

BABY BED.—Take a high, narrow wooden box, knock out one side. Pad the inside, including loose side. Cover padding with pretty calico. Hinge loose side to bottom. Cover the outside with calico. Put wooden buttons on sides to fasten up the loose side when necessary. Place on two chairs at night, letting hinged side cover the edge of bed. This gives baby the separate bed, makes it safe for baby to roll around in, and is more convenient for mother than separate crib or cradle.—Bazar.

FERTILIZERS.—Take four old boards about four feet long and define a square plot of ground in the chip dirt near your wood pile. Nail boards at corner and drive in dirt. On this spot throw dust from sweepings, ashes, etc., working under all objectionable appearances. Put the bones there, old plaster, dead chickens, lime, etc. It is convenient and need not be unsightly. S. D.

HOURS OF EASE.

APPRECIATION.

A galling thing in family life is lack of appreciation. No one would admit that his work was done in the hope of praise and yet we all acknowledge the power that discriminating praise holds in itself.

The busy housekeeper who makes a study of the well being, the comfort, of every inmate of the home, sometimes spends many precious minutes in the making of a special dish or the finishing of some bit of decoration. A little admiration, an expression of appreciation would go far toward repaying her, but the effort is received in silence, or with a wonder that she should so waste her time, and the poor woman is depressed and repressed. Every one knows that criticism is not withheld from failure, if praise is from success; all through a month, the soup, fish, meat, dessert may have been perfect, and perfectly served, and no comment made, let but one of these things fail for one single time, and there will be a shower of "My dear, where did this tough beef come from?" "Mother, this undercrust is not baked." "Don't you think, mother, this sauce is too floury?"

I know a family of girls who declare that they never know what their father thinks of them as he is always entirely reticent at home, and seems not to notice, certainly not to be interested, in any of the family works, yet when he visits his friends he says "My wife is a wonderful woman,

what do you think she has done now? Covered our old sofa with new stuff, and it looks tip-top, just as if the upholsterer had done it." Else it is his daughter he praises—her bread is the "best he ever eats," her energy, her management are so superior.

By and by the wife and daughter hear of this praise in some round-about way and feel a thrill of pleasure, which, great as it is, would be ten times greater had the father himself spoken to them his words or sympathy and praise.

Why not cultivate something of a demonstrative disposition if we have not one "by nature?" I do not mean that we ought to be always telling our loved ones how much we love them—but it is better to do this too often rather than too seldom—and there is nothing amiss in the expression of affection. It is true "action speaks louder than words," but words have a charm of their own, and a term of endearment, a loving word sometimes lingers in the memory as a precious possession.

Especially is this true in regard to children; they seem literally a thirst for the caresses and fond words which fortunately they seem to incite in those who love them.

I know of one little girl, who being slightly indisposed, was being fondled and cared for by her mother, a woman generally too busy to show her warm heart to her children.

"Mother," said the child, "I would much rather be a little sick than quite well."

"Why?"

"Oh, because, when I am not well you take me on your lap and you look at me so sweetly, and call me darling!"

This poor little creature had thought herself unloved, because she missed the words of affection, and was not able to understand the love that her mother showed in her daily, hourly hard work for the little family.

OUR BOYS AND GIRLS.

I wonder how many boys and girls are turning their attention to earning the premiums offered in our June 15 number. By the by, I wish our editor would give space to the offer as often as he can spare it.

I will tell you what one of my little grand boys is doing, and I hope he will have a good report to make next November.

He has planted pop corn, which he works very faithfully; and also has vegetables, such as radishes and lettuce, which I buy from him when they are in good order and I need them.

I will give you a hint that may be useful to some one. In the village-market stores we seldom find herbs for seasoning purposes when we want them. Several years ago I wanted to raise a fund for some church demand, and having a beautiful little bed of parsley, I made up about a dozen bunches each morning and sent them to a meat store where they went to the postoffice, so that it involved no extra trouble. In a little while I had about \$3. One little boy I know of earned his first pair of pants by raising cabbage plants. Do let me hear what you boys and girls are doing. I shall be so glad to find you are taking hold of it in earnest. CERES.

THE STORY OF A DOG.

In the year 187—the steamship *Swallow* left the Cape of Good Hope, bound for England—"for home" the passengers, all English, called it. Among them was a lady with a child of two years and a nurse. The lady had also brought with her a huge, handsome Newfoundland dog.

The voyage had lasted about six days. No land was visible, and the island of St. Helena would be the nearest point. The day was a beautiful one, with a soft breeze blowing, and the sun shining down brightly on the sparkling waters. A large and gay company of the passengers were assembled on deck; merry groups of young men and girls had clustered together; now and then a laugh rang out, or some one sang a gay little snatch of song, when suddenly the mirth of all was silenced by the loud and piercing scream of a woman.

A nurse who had been holding a child in her arms at the side of the vessel had lost her hold of the leaping, restless little one, and it had fallen overboard into the sea—into the great, wide Atlantic Ocean. The poor woman, in her despair, would have flung herself after her charge had not strong arms held her back. But sooner than it can be written down, something rushed swiftly past her; there was a leap over the vessel's side, a splash into the waters, and then Nero's back and head appeared above the waves, holding the child in his mouth.

The engines were stopped as soon as possible, but by that time the dog was far behind in the wake of the vessel. A boat was quickly lowered, and the ship's surgeon, taking his place in it ordered the sailors to pull for their lives. One could just make out on the leaping, dancing waves the dog's black head, holding something scarlet in his mouth. The child had on a little jacket of scarlet cloth, and it gleamed like a spark of fire on the dark blue waves.

The mother of the child stands on the deck, her eyes straining anxiously after the boat, and the black spot upon the waves still holding firmly to the tiny scarlet point. How long the time seems! The boat seems fairly to creep, though it speeds over the waves as it never did before.

Sometimes a billow higher than its fellows hides for a moment dog and child from the anxious straining eyes. One can almost hear the watchers' hearts then throb with fear lest the waves may have swallowed them up. But the boat comes nearer and nearer, near enough at last to allow of the surgeon's reaching over and lifting the child out of the dog's mouth, then a sailor's strong arm pulls Nero into the boat, and the men row swiftly back to the ship.

"Alive!" is shouted from every lip as

the boat comes within hale of the steamer; and as the answer comes back, "Alive!" a "thank God!" breaks from every heart. Then the boat comes up to the ship's side. A hundred hands are stretched out to help the brave dog on board, and "Good Nero," "Brave dog," "Good fellow," resound on every side. But Nero ignores the praise showered so profusely on him; he trots sedately up to the child's mother, and with a wag of his dripping tail, looks up into her face with his big, faithful brown eyes. It was as if he said, "It is all right; I have brought her back quite safe." The mother drops on her knees on the deck, and taking his shaggy head in both hands, kisses his wet face again and again the tears pouring down her face in streams. There is indeed not a dry eye on board. One old sailor stands near with the tears running down his weather-beaten brown face, all the while unconscious that he is weeping.

Well, as one can imagine, Nero was for the rest of the voyage the pet and hero of the whole ship. He bore his honors with quiet modest dignity. It was curious however, to see how from that time on he made himself the sentinel and body-guard of the child he had saved. He always placed himself at the side of the chair of any person in whose arms she was, his eyes watching every movement she made. Sometimes she would be laid on the deck, with Nero only to watch her, and if inclined to creep out of bounds, Nero's teeth, fastened firmly in the skirt of her frock, promptly drew her back. It was as though he thought, "I have been lucky enough, Miss Baby, to save you once from a watery grave, but as I may not be so lucky again, I shall take care you don't run any unnecessary risks in future."

When the steamer reached her destination, Nero received a regular ovation as he was leaving the vessel. Some one cried, "Three cheers for Nero!" and they were given with a will. And "Good-by, Nero," "Good-by, good dog," resounded from every side. Every one crowded around to give him a pat on the head as he trotted down the gang-plank. To all demonstrations he could, of course only reply with a wag of his plummy tail and a twinkle of his faithful brown eyes. He kept close to the nurse's side, and watched anxiously his little charge's arrival on dry land.

He was taken to the home of his little mistress, where he lived, loved and honored, until he died of old age, with his shaggy grey head resting on the knee of the child (a woman now) that he had saved. His grave is in an English church-yard, in consecrated ground. He lies in the burial plot of the family to which he belonged. His grave is marked by a fair white stone, on which is engraved.

Sacred to the Memory of Nero,
Faithfullest of Dogs.

His portrait hangs over the chimney-piece of an English drawing-room, beneath which sits, in a low-arm chair, a fair-haired girl, who often looks up at Nero's portrait as she tells the tale of how he sprang into the waters of the Atlantic Ocean after her, and held her up until help came.—*Harper's Young People.*

GRANGE DAY AT GLEN ECHO CHAUTAUQUA.

Following the example of its honored parent, the original Chautauqua Lake Assembly of New York where annually a day is set aside in the programme and known as "Grange Day", to which members of this time-tried organization of farmers and their friends are invited and participate in the exercises, the new Glen Echo Chautauqua has devoted July 18th largely to Agriculture. In the morning, Hon. Edwin Willetts, Assistant Secretary of Agriculture, will deliver an address in the grand auditorium with its capacity for an audience of 10,000 persons, John Trimble Secretary of the National Grange of the Patrons of Husbandry, was invited by Chancellor Gillet to name a person to deliver an address upon the work of the Grange organization among farmers. The Secretary immediately designated the brilliant orator of the order, Hon. Mortimer Whitehead, Lecturer of the National Grange. Bro. Whitehead, with the promptness that ever characterizes him in stepping to the front whenever the good of the order calls him, accepted the invitation. Members of the order and farmers generally in Maryland, Virginia, and the District of Columbia are earnestly invited to be present on the day named, and improve the opportunities that have been so generously granted. The only expense will be 40 cents, general admission fee to the grounds, upon which hundreds of thousands of dollars have already been spent for buildings and other improvements. All parties visiting the Chautauqua at Glen Echo, can bring their lunches and ample arrangements are made for their accommodation.

Patrons, farmers, make a holiday of July 18th. We will have brilliant speeches—in the morning by Professor Willetts, Assistant Secretary of the Department of Agriculture on the general interests of Agriculture. In the afternoon we will have our own silver-tongued orator, Bro. Whitehead. Brothers Wm. Saunders and J. R. Thompson, founders of the order, will also be present. Come and enjoy yourselves, in a social and intellectual feast, such as we Patrons of Husbandry are accustomed to, occupying the high and conservative lines of order rather than the baser standpoint of parties and politics which some of our outside friends believe to be our leading motive.

Let us, as Patrons and farmers, all cheerfully co-operate in making this first "Grange Day" at the new Chautauqua a complete success, and it will be but the beginning of a series of annual gatherings which will develop and advance the great educational features of our order.

Committee of Arrangements:

John Trimble, Chairman,
Secretary National Grange.
H. M. Murray, M., Md. State Grange.
X. X. Charters, M., Va. State Grange.
W. M. King, Potomac Grange, D. C.
J. B. Ager, M., Montgomery County Grange, Md.
J. E. Ray, M., Eureka Grange, Md.

THE SELECTION OF SEEDS.

If we take a moment to consider the losses to the farmers and gardeners, that result from the use of bad seed, the great importance of being very careful in selecting all kinds of seed will appear plain enough.

If the land be ever so good and the cultivation all it should be, but unless good seed are planted—seed from plants sound in the vital parts—the crop can not be good. Many a sad disappointment would be avoided if more time and care was spent in the selection of seed. Too many planters look upon seed gathering as a matter of small importance, and the consequence is, on too many farms no seed are put away for the various crops. When seed are needed, anything is taken that bears a resemblance to and the name of what is wanted, and no other qualities are looked after.

In too many cases when seed are saved at home, they are taken from the worst of the crop, because it could not be sold. It is hard to say which is the worst practice, to save the seed at all or to select the damaged part of the crop for seed. When seed are saved at home none but the very best should be selected. When we do this the seed for the different crops are always ready and perfectly reliable in every way. When we have plenty of seed of our own raising we need not be as sparing with them and are more certain of a stand than we are when the seed are bought.

When we save seed from crops grown at home we have a great variety to select from, but the seed we buy as a rule, are never so selected. Nothing is rejected when a crop is raised for the seed, and at the low price for which seed are sold it would not pay to do so. When careful selection of plants for seed are made by seedsmen, the price of such seed must necessarily be very high. The same carefully selected seed saved at home would cost the planter much less.

The planter is often heard to say that he can buy seed cheaper than he can save them, but this is a mistake, as many a one has found out to his sorrow. To say nothing of having to go several miles to a store when seed are wanted, or the trouble of sending to other States for them. One can never be as certain of what bought seed are going to bring forth as when you use seed selected at home.

We have nothing to say against the reliable seed-growers and dealers of the country, for without them we could not get along. After the planter has done his full duty in the way of saving seed more seed are required. What we want to impress on the mind of the planter is the importance of relying more on home-grown seed.

When the canteloupe raiser is selling his canteloupes for two or three dollars a barrel he is quick to conclude it would not pay him to save seed from selected canteloupes, when he can buy the same kind of seed for fifty cents a pound, one-sixth what it would cost him to save them. But when we consider a crop of canteloupes grown from seed selected from the very best melons, will sell for a third or half more

than a crop grown from bought seed that were not selected, we see how it is cheaper to save seed from home-grown, selected melons.

By always being careful to save the best of a crop for seed, a plant, if it does not improve, will hold its own, that is, not run out, and this we can not be sure of when we use bought seed.

Improvements are made in plants as well as in animals, by selecting the very best to propagate from. When no selection of seed are made, but are indiscriminately saved, improvements in plants are impossible, and we are lucky if degeneration does not take place. No doubt but the greatest cause of the running out of plants under cultivation is the indiscriminate saving of seed, and we notice those who are the most careless in selecting seed are the ones who are continually changing seed.

Some plants are so easily injured by being planted near kindred plants, that it is not safe to buy seed of them at all. Canteloupes grown near cucumbers are not fit for seed, and a single gourd growing near a watermelon patch will ruin the whole patch for seed. For this reason if you have an extra good kind of canteloupe or watermelon it is best to save seed of them at home. It is noticed that new kinds of melons soon die out, and the principal cause is, pains enough are not taken in selecting melons for seed. We see a few farmers who are very careful in selecting melons for seed having varieties of melons perfectly preserved long after the same melon on account of deterioration is succeeded in the market by a new kind.

A great deal has been said in advocacy of a frequent change of nearly all kinds of seed, to prevent running out, but that such a practice is not necessary will appear quite plain when we consider that in a state of nature the same plants grow in the same places for centuries without any apparent deterioration. We know a change of seed is made necessary quite frequently by carelessness in selecting seed, but we know of but a few instances where the seed were properly selected that a change of seed was necessary.

Only a few years ago we thought it necessary to change our seed Irish potatoes every few years, and, where it could be done conveniently, every year, and we found it best when we made a change to get potatoes from the North. Now we know a change of seed potatoes was necessary, not because potatoes will not do well in the same place for a long time, but because we did not know how to grow seed.—*Home and Farm.*

SILOS AND ENSILAGE.

Many letters of inquiry have reached me, questions from Oregon, Missouri, Tennessee, New Jersey, Massachusetts and several from Indiana, and especially one man from Clay City, Indiana, who begs of some man to tell him all about the silo and how the stuff can be cut up and packed so it will not all rot. He wants it all at once. To commence with, let me say to Clay City, you can raise just as large a crop of ensilage corn on your soil there as I do here. Take good sod ground, as you usual-

ly do for field-corn, plow it good, harrow it fine, cross harrow it finer, crush it or roll it, smash the lumps, plant the corn there with a drill planter, if you can get one, in rows, say three feet and eight inches apart if you have a good, rich piece of land; if that is too close for best field-corn there, make the rows from three feet ten inches to four feet apart, and drop the kernels from eight to twelve inches apart in the row. Just as the corn comes up, harrow the ground nicely lengthwise of the row, and kill all the grass or weeds that have started. Sometimes it is best to harrow again. I often do it twice, then cultivate between the rows as soon as the corn comes up high enough to see the rows plainly. Hoe it once and thin out if two or more stalks come close together. Cultivate it from three to five times and you will then have the hundreds bushels of corn I mentioned per acre, not shelled corn, but corn in the ear, thirty-five pounds to the bushel, and you will have from fifteen to twenty tons of the ensilage per acre on all your Clay City land if you do as I tell you.

You can use sweep horse-power, from two to ten horse-power, or tread horse-power, steam thrasher-engine power of any kind, if you use the strong Ohio feed-cutter I named, and your ensilage will be cut up all right for winter feeding. You cannot do this silo filling with a hand-power cutter. In answer to all others let me say, ensilage to be good food must be grown to near full maturity. Oats, rye, clover, or any other crop is not as good for ensilage as corn, nor can you produce it as cheaply per ton. In all cases it must go into the silo wet or it will not pack good and tight. If hot, dry weather strikes you at this harvest time and the leaves and stalks are dry, pour on water or sprinkle on water so it moistens the whole mass. You need not be afraid of hurting it by getting it too wet. The failures numerous ones have written me about, no doubt comes from the fact that the ensilage was not wet enough and they did not tread the sides and corners good enough.

I never shall advise filling with whole corn-stalks. We have tried it two winters, but it does not distribute the grain evenly. It is a devil of a job to cut it up in the winter time or get out of the pits in any way or shape to feed, and the cattle have a big time pulling and hauling to get the ears of corn first before they will eat up the whole stalks. To fork out or pull out or get out of a pit from ten to fifteen feet deep, corn-stalks—wet, slimy, stringy stuff—begets the height of exasperation and greatest need for prayer.

Good, mature, sweet ensilage from field-corn or the large, white, southern corn, as I have described, will never injure the quality of butter or milk. It will not give it a bad flavor. No live man ever saw injured milk from this cause. If you make green, immature corn, finely grown, without any ears, into ensilage, you might have sour smell feed, good for nothing and that would impart bad flavor. To the Massachusetts inquirers let me say, don't hesitate a moment to adopt the silo for fear of hurting the quality of milk or butter.

Building lumber is put up in so many different forms in this country, that all your readers do not understand what I mean by planed and matched lumber for a silo ceiling or the floor of them. Any kind of wood will make a perfect silo. I only name pine because that lasts the longest in a wet condition a portion of the year. Build of any kind of wood you can get the easiest or cheapest in your locality. I say planed and matched and not over four inches wide. It must be smooth or the ensilage will not settle down easily or evenly. Matched lumber means tongued and grooved so it will join together and not spring apart. It must be narrow, because when the silos are empty the lumber will dry up and shrink, and if it is wide boards they will shrink out of the matching and then out of place.

You can have them in the first story of barns or other buildings, and use the earth for floor, or you can build them in second stories of your barns and have the whole of the first floor or basement for stable room. It does seem to me that if you will all read over the six articles on this subject I have written before, you will find nearly every question you have asked me in your special correspondence answered, except those pertaining to feed-cutters and powers to run them with, and the best places to buy seed-corn. These questions are hard to answer in a public way because a customer in Oregon and one in Massachusetts don't need to be sent to the same place for supplies. You can get all these things near home. I have taken the liberty to speak plainly about feed-cutters only, for I have seen so many frail and imperfect ones put out by manufacturers, that break almost every time you attempt the work that I mentioned. I gave the Ohio pattern as being one of the strongest and best I ever saw. I have written scores of letters to correspondents on some particular points, and as a rule all of such have sent a stamped envelope or postal card for reply. I have no idea that I can ever make this subject so plain that readers cannot think of some question to ask.—H. TALCOTT, in *Farm and Fireside.*

BRIEF NEWS SUMMARY.

FOREIGN.—Twenty-five thousand tin-plate workers in Wales will be locked out.—The British Parliament will be prorogued August 6.—The Irish land bill passed its third reading in the House.—London laundresses struck for 8 hours and 84 cents a day; they entered establishments where "blacklegs" were employed, dragged them from their work, upset tubs and tables and smashed windows.—England and Wales show population of 29,000,000, increase of 3,000,000 in the last decade.—The dead in the railroad wreck near Basle number 150: Twelve carloads of excursionists were going to a musical festival in Switzerland.—Bengal, India, had sixty earthquake shocks, June 18; many buildings were destroyed.

GENERAL.—The heaviest rainfall experienced within twenty-eight years in Nebraska fell at Neligh, over five and one half inches coming down within three hours.—The collections of internal revenue for the first eleven months of the fiscal year ending July 1, were \$131,887,407, an increase of \$1,265,945 compared with same months of the previous year.

GENERAL.—President D. C. Gilman, of the Johns Hopkins University, has been invited to become chief of the department of liberal arts.—Charles Webb, aged seventy-two, formerly city collector of taxes, and a

member of the firm of Armstrong & Co., died.—The rain in Carroll county has injured the wheat crop, and the yield will be much less per acre than was expected.—The wheat crop in Charles county was injured by a storm.—Secretary of the Navy Tracy has informed Governor Jackson that the Maryland oyster navy cannot properly be included under the head of the naval militia.—During the strawberry season 314 carloads were shipped from Baltimore by the Northern Central Railway.—Professor M. A. Newell, ex-Superintendent of the State Normal School, has been elected principal of the Havre de Grace High School.—A rowboat containing ten colored berry pickers was capsized in Curtis' Creek and five men and two women were drowned.—The mandamus case involving the question of authority between the stockholders of the Maryland Agricultural College and the Board of Public Works will be submitted on written arguments.—Gen. William McKenney, of Queen Anne's county, estimates his wheat crop at 60,000 bushels.—County fairs will be held as follows: Talbot, September 1-4; Cecil, September 15-18; Baltimore, September 8-11; Harford, October 13-16, and Washington, October 13-17.—Major-General John M. Schofield, commanding United States army, married Miss Georgia W. Kilbourne at Keokuk, Iowa.—H. Victor Newcomb, a wealthy Wall street operator, recently retired, has been placed in an asylum.—At the Ohio Republican convention, Major McKinley was nominated for governor.—President Harrison issued a proclamation, June 15, stating that the United States and Great Britain had agreed on a closed season in Behring Sea, until May next; 7,500 seal may be caught on the islands for subsistence of the natives.—Seven tons of pig tin from the Temescal mines reached San Francisco last week.—Meetings are being held in the South to raise funds for a monument to Jefferson Davis.—Seabright, N. J., was burned, June 16, with loss of \$330,000, and 150 families made homeless.

BALTIMORE MARKETS—June 30.

BREADSTUFFS.

Flour.—Steady, with quotations as follows: Western Wheat Super., 3 50a3 75; Western Wheat Extra, 4 00a4 25; Baltimore High Grade Family, 5 75; City Mills Super., 3 00a3 75; Rio Extra, 5 75a5 95; Rye Flour, medium to choice, 4 50a5 25; Cornmeal, per 100 lbs., 1 35a1 60.

Wheat.—Southern inactive for lack of offerings. Bulk quoted at 1 00a1 06 cents; longberry at 1 02a1 07 cents. Western firm, No. 2 red spot selling at 1 02 cents, and 98 cents for July.

Corn.—Southern dull, quotations being 75 cents for white and 70a75 cents for yellow. Western dull, mixed spot selling at 62 cents.

Oats.—Dull. We quote ungraded Southern and Pennsylvania 44a44 cents, Western white 42a44 cents, do. mixed 40a42 cents, No. 2 white 42a44 cents.

Rye.—In light demand. Choice Western quoted at 88a90 cents; good to prime 83a85 cents; common to fair 70a80 cents.

Hay and Straw.—Hay was steady. The quotations were: Choice, 12 00a12 50, good to prime, 11 00a11 50; fair to good mixed, 10 00a10 50; common and inferior, 8 50a9 50. Clover Hay, 9 00a10 00. Off grades 8 50a9 50 on track. The market for straw was quiet, with moderate offerings and fair demand. Rye in carloads 16 50a17 50 for large bales in sheaves, 12 00a13 00 for blocks; Wheat blocks 8 00a9 00 and Oat blocks 11 00a11 50 per ton. At scales.—Hay—Timothy, 12a14, Clover Hay 9a11 per ton. Straw—Wheat 8, Rye 13a16, Oat 9 per ton. Ear Corn 3 50a4 00 per bbl.

Mill Feed.—Quiet, but steady. Western Bran, light, 12a13 lbs., 20 00a21 00; do. medium 14a16 lbs., 18 00a19 00; heavy, over 16 lbs., 17 00a18 00, and Middlings 20 00a21 00, all on track. City Mills Middlings 22 00 per ton delivered.

Provisions.—Quiet. We quote sugar-pickled Shoulders 8 1/2 cts.; smoked sugar-cured Shoulders 7 1/2 cts.; sugar-cured Breasts 8 1/2 cts.; canned and uncanned Hams small averages, 11 1/2a12 cts.; large averages 11 1/2a11 1/2 cts. per lb. Mess pork, old, 12 1/2 cts., and do. new, 13 1/2 cts. per bbl. Lard, best refined, pure, 7 1/2 cts. per lb.

Butter.—Firm, demand good. The quotations were: Fancy creamery jobbing at 19 cts., good to choice creamery 16a17 cts. per lb. Imitation creamery 16a17 cts. per lb. Fancy ladle-packed 14a15 cts., prime to choice do., 13a14 cts. per lb. Store-packed 11a12 cents, and creamery Prints 10a30 cents per lb.

Cheese.—Good grades in demand. We quote fancy full cream, New York State, 50a60 lbs., 9 1/2a9 1/2 cents; choice full cream 9a9 1/2 cents; New York flats, 30 to 35 lbs. size, 9 1/2a9 1/2 cents per lb.

Eggs.—Demand good. Fresh laid hen eggs 17 1/2a18 cents per dozen. Cold-storage stock 16 1/2a17 cents per dozen.

Poultry.—In strong demand. Large spring chickens 23a24 cents per lb., small do. to medium 21a22 cents per lb., old hens 12a12 1/2 cents per lb., and old roosters 25a30 cents apiece. Old ducks 8a9 cents per lb. Spring ducks 14 cents per lb., 2 7/2a4 50 per dozen.

Cotton.—The local market closed nominal at 8 1/2 cents per lb. for middling.

Canned Goods.—Fairly active. Three-pound peaches, 12a13 1/2; two-pound tomatoes, 8 cents; three-pound do., 8 cents; two-pound green corn, 8a8 1/2 cents; Bartlett pears, 1 1/2a2 1/2; Marrowfat peas 11a11 1/2; Early June peas, 11a11 1/2.

Tobacco.—Maryland active, with a good demand for all grades at former prices, except

very common. We quote common and frosted per 100 lbs., 1st 50; sound common, 2nd 3; good common, 4th 5; middling, 6th 8; good to fine red 9th 11; fancy, 12th 13; upper country, 3rd 20; ground leaves, 1st 9.

Wool—Very quiet. We quote unwashed 21a 24 cents, tub-washed 30a 33 cents, pulled 35a 38 cents, and Merino 16a 18 cents per pound.

LIVE STOCK.

Beef Cattle—Rather dull. Prices ranged as follows: Best Bees 5 5/8 to 5 65, those generally rated first quality 4 50 to 5 25, medium or good fair quality 3 00 to 4 25, and ordinary Thin Steers, Oxen and Cows 2 25 to 3 00 per 100 lbs.

Sheep and Lambs—We quote butcher's sheep at 3 1/4 cents per lb. gross, with few at the latter price. Lamb at 5 1/2 to 6 1/2 cents per lb. gross.

Swine—Moderately active. Quotations show no change from last week, ranging at 6 1/2 cts. net, the best Western selling at the latter figure; nearby hogs, 6 1/4 to 6 1/2; most sales of good to best Western 6 1/2 to 6 3/4 net.

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